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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,791	11/26/2003	Rakesh Mohan Lal	132355GS/YOD GEMS:0205	9095
7590 10/03/2007				
Patrick S. Yoder FLETCHER YODER P.O. Box 692289 Houston, TX 77269-2289			EXAMINER ABDI, AMARA	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 10/03/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/723,791	LAL ET AL.	
	Examiner	Art Unit	
	Amara Abdi	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 11-16 and 19-26 is/are rejected.
- 7) ☒ Claim(s) 5-7, 9, 10, 17 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's response to the last office action, filed July 30, 2007 has been entered and made of record.
2. In view of the Applicant amendments, the objections to the drawings are expressly withdrawn.
3. In view of the Applicant amendments, the objections to the claims 2,9-10, and 18 are expressly withdrawn.
4. In view of the Applicant amendments, the rejection under 35 U.S.C §101 of claims 25-26 is expressly withdrawn.
5. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz (US 6,248,988) in view of Okada et al. (US 2004/0032990) and Avinash (US 5,943,433)

(1) Regarding claims 1,23, and 25:

Krantz discloses a method (column 10, line 6), system (column 1, line 5-6) and computer readable medium storing computer program (column 6, line 65) for producing an image from image data (column 9, line 1) comprising the accessing of the stored image data from a memory (column 6, line 63-65), (the image database is read as memory), and comparing the pixel sampling rate to a desired sampling rate (column 3, line 25-26), (the desired sampling rate is read as Nyquist's theorem).

Krantz do not explicitly mention the following items:

- 1) determining a pixel-sampling rate for the image data;
- 2) determining a shrink parameter, and processing the image data, including shrinking an input image based upon the shrink parameter.

(A) Concerning the item 1):

Okada et al., in analogous environment, teaches an image processor and method thereof, where determining a pixel-sampling rate for the image data (paragraph [0053], line 1-3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Okada et al., where determining a pixel-sampling rate for the image data, in the system of Krantz in order to obtain images having higher SN ratio than conventional devices yet maintaining a dynamic range of a sufficient degree even when the images are shot at a high frame rate (paragraph [0018], line 1-4).

(B) Concerning the item 2):

Avinash, in analogous environment, teaches a method for correcting inhomogeneity of spatial intensity in an acquired MR image, where determining a shrink parameter (column 6, line 21-24), and processing the image data, where shrinking an input image based upon the shrink parameter (column 5, line 14-18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Avinash, where determining the shrinking parameter, in the system of Okada et al. in order to a method where the speed of computation is substantially improved by using reduced data sets, without compromising the accuracy of the final result (column 4, line 5-8).

(2) Regarding claim 2:

Krantz further discloses the method, where the desired sampling rate is a Nyquist rate sampling for the image (column 8, line 29-30), (the use of Nyquist rate is read as the desired sampling rate).

(3) Regarding claim 3:

Krantz further discloses the method, where the desired sampling rate is determined based at least on a point-spread function of the imaging system, or the frequency content of the image data (column 13, line 30-34).

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz, Okada et al., and Avinash, as applied to claim 1 above, and further in view of Finger et al. (US 6,015,385).

Krantz, Okada et al., and Avinash disclose all the subject matter as described in claim 1 above.

Krantz, Okada et al., and Avinash do not explicitly mention the method, where the pixels sampling rate is determined based upon a display filed of view and a size of pixels in the filed of view.

Finger et al., in analogous environment, teaches an ultrasonic diagnostic imaging system with programmable acoustic signal processor, where the pixels sampling rate is determined based upon a display filed of view (column 8, line 17-20) and a size of pixels in the filed of view (column 8, line 8-12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Finger et al., where the pixels sampling rate is determined based upon a display filed of view, in the system of Krantz in order to reduce image artifacts and maximize the amount of information in a displayed image, for both full size and enlarged images (column 1, line 19-21).

9. Claims 8,13-16,24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz (US 6,248,988) in view of Okada et al. (US 2004/0032990), and Finger et al. (US 6,015,385).

(1) Regarding claims 8,16,24, and 26:

Krantz discloses a method (column 10, line 6), system (column 1, line 5-6) and computer readable medium storing computer program (column 6, line 65) for producing an image from image data (column 9, line 1) comprising the accessing of the stored

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image data from a memory (column 6, line 63-65), (the image database is read as memory), determining a desired sampling rate for the image data (column 8, line 29-30), (the use of Nyquist rate is read as the desired sampling rate), and comparing the pixel sampling rate to a desired sampling rate (column 3, line 25-26), (the desired sampling rate is read as Nyquist's theorem).

Krantz do not explicitly mention the following items:

- 1) determining a pixel sampling rate for the image data
- 2) determining the redundancy metric and the processing of the image data

based upon the redundancy metric.

(A) Concerning the item 1):

Okada et al., in analogous environment, teaches an image processor and method thereof, where determining a pixel-sampling rate for the image data (paragraph [0053], line 1-3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Okada et al., where determining a pixel-sampling rate for the image data, in the system of Krantz in order to obtain images having higher SN ratio than conventional devices yet maintaining a dynamic range of a sufficient degree even when the images are shot at a high frame rate (paragraph [0018], line 1-4).

(B) Concerning the item 2):

Finger et al., in analogous environment, teaches an ultrasonic diagnostic imaging system with programmable acoustic signal processor, where determining the redundancy (column 8, line 8-12 and 17-20), (the determining of the redundancy metric is read as the same concept as the determining of a display filed of view and a size of pixels in the filed of view), and processing the image data based on the redundancy metric (column 8, line 8-12), (the system control is read as the image processing, and the redundancy metric is read as a display filed of view and a size of pixels in the filed of view).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Finger et al., where determining the redundancy metric, in the system of Krantz in order to reduce image artifacts and maximize the amount of information in a displayed image, for both full size and enlarged images (column 1, line 19-21).

(2) Regarding claim 13:

Krantz further disclose the method, where the desired sampling rate is a Nyquist rate of sampling for the image (column 8, line 29-30), (the use of Nyquist rate is read as the desired sampling rate).

(3) Regarding claim 14:

Krantz further discloses the method, where the desired sampling rate is determined based at least on a point-spread function of the imaging system, or the frequency content of the image data (column 13, line 30-34).

(4) Regarding claim 15:

Krantz, Okada et al., and Avinash disclose all the subject matter as described in claim 8 above.

Krantz, Okada et al., and Avinash do not explicitly mention the method, where the pixels sampling rate is determined based upon a display filed of view and a size of pixels in the filed of view.

Finger et al., in analogous environment, teaches an ultrasonic diagnostic imaging system with programmable acoustic signal processor, where the pixels sampling rate is determined based upon a display filed of view (column 8, line 17-20) and a size of pixels in the filed of view (column 8, line 8-12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Finger et al., where the pixels sampling rate is determined based upon a display filed of view, in the system of Krantz in order to reduce image artifacts and maximize the amount of information in a displayed image, for both full size and enlarged images (column 1, line 19-21).

10. Claims 11-12, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz, Okada et al., and Finger et al., as applied to claim 8 above, and further in view of Blackham et al. (US PG-PUB 2002/0130875).

(1) Regarding claims 11 and 19:

Krantz, Okada et al., and Finger et al. disclose all the subject matter as described in claim 8 above.

Krantz, Okada et al., and Finger et al. do not explicitly mention the method, where image data is processed by resampling the image data.

Blackham et al., in analogous environment, teaches an image display apparatus, where the image data is processed by resampling the image data into a small pixels by using the standard interpolation method (paragraph [0023], line 4-8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Blackham et al., where resampling the image data, in the system of Krantz in order to provide wide angle display apparatus with a uniform high resolution capability (paragraph [0007], line 1-3).

(2) Regarding claims 12 and 20:

Krantz disclose the matching the image data to the desired sampling rate (the matching of matching the image data to the desired sampling rate is read as the same concept as the comparing of the image data to the Nyquist theorem).

Krantz do not explicitly mention the resampling of the image data.

Blackham et al., in analogous environment, teaches an image display apparatus, where the image data is processed by resampling the image data into a small pixels by using the standard interpolation method (paragraph [0023], line 4-8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Blackham et al., where resampling the image data, in the system of Krantz in order to provide wide angle display apparatus with a uniform high resolution capability (paragraph [0007], line 1-3).

11. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz, Okada et al., and Finger et al., as applied to claim 16 above, and further in view of Delestienne et el. (US 6,377,162).

(1) Regarding claim 21:

Krantz, Okada et al., and Finger et al. disclose all the subject matter as described in claim 16 above.

Krantz, Okada et al., and Finger et al. do not explicitly mention the acquisition system.

Delestienne et el., in analogous environment, teaches a medical diagnosis field service method and apparatus, where the system comprises a data acquisition system (column 5, line 46-47), (the data acquisition system is read as the signal acquisition unit).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Delestienne et el., where the system comprising a data acquisition system, in the system of Krantz in order to permit interactive exchange of information, such as service request and data, between diagnostic systems, remote or centralized field services facilities, and field services units (column 3, line 1-3).

(2) Regarding claim 22:

Krantz, Okada et al., and Finger et al. disclose all the subject matter as described in claim 21 above.

Krantz, Okada et al., and Finger et al. do not explicitly mention the system, where the acquisition system is selected from a group consisting of a CT system, an MRI system, an ultrasound system, an X-ray system, a tomosynthesis system, and PET system.

Delestienne et al., in analogous environment, teaches a medical diagnosis field service method and apparatus, where the system controller is linked to a communication module generally similar to communication module of MRI system (column 5, line 56-59), (the data acquisition system is read as the system controller).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Delestienne et al., where the data acquisition system is selected linked to an MRI system, in the system of Krantz in order to permit interactive exchange of information, such as service request and data, between diagnostic systems, remote or centralized field services facilities, and field services units (column 3, line 1-3).

Allowable Subject Matter

12. Claims 5,9, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 6-7,10, and 18 depend from claims 5,9, and 17, therefore, are objected.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

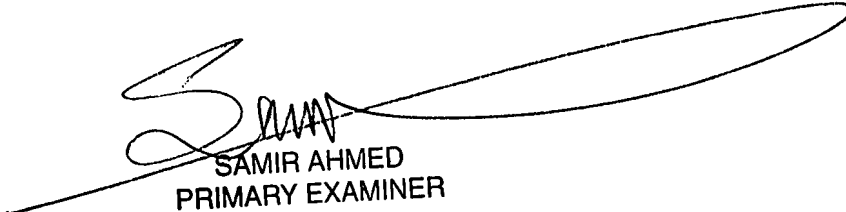
Contact Information:

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571) 270-1670. The examiner can normally be reached on Monday through Friday 7:30 Am to 5:00 PM E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wu Jingge can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amara Abdi
09/28/2007



SAMIR AHMED
PRIMARY EXAMINER